

Decision **PROPOSED DECISION OF ALJ YACKNIN (Mailed 12/12/2013)**

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric Company (U39E) for a Certificate of Public Convenience and Necessity Authorizing the Construction of the Embarcadero-Potrero 230 kV Transmission Project.

Application 12-12-004  
(Filed December 11, 2012)

**DECISION GRANTING CERTIFICATE OF PUBLIC CONVENIENCE  
AND NECESSITY AUTHORIZING CONSTRUCTION OF THE  
EMBARCADERO-POTRERO 230 KV TRANSMISSION PROJECT**

**1. Summary**

This decision grants Pacific Gas and Electric Company a certificate of public convenience and necessity authorizing the construction of the Embarcadero-Potrero 230 kilovolt transmission project, with mitigation identified in the Mitigation Monitoring Plan attached to this order. As the lead agency for environmental review of the project, we find that the Mitigated Negative Declaration prepared for this project meets the requirements of the California Environmental Quality Act.

This proceeding is closed.

**2. Proposed Project**

By this application, Pacific Gas and Electric Company (PG&E) seeks a certificate of public convenience and necessity authorizing the construction of the Embarcadero-Potrero 230 kilovolt (kV) transmission project. The project would

be located in the City and County of San Francisco, and consists of three major elements:

1. Construction of an approximately 3.5 mile, single-circuit 230 kV three-phase system, 2.5 miles of which would be laid underneath the sea floor of the San Francisco Bay, with land-based interconnections to the existing Embarcadero Substation and Potrero Switchyard;
2. Termination of the new cable into the 230 kV bus at Embarcadero Substation (which is currently being upgraded from 115 kV to 230 kV as part of a separate reliability project); and
3. Construction of a new 230 kV switchyard near the existing 115 kV Potrero Switchyard at the termination of the new cable, and interconnection of the new and existing switchyards.

### **3. Procedural Background**

PG&E filed this application on December 11, 2012. The Office of Ratepayer Advocates (ORA)<sup>1</sup> filed a timely protest and Trans Bay Cable LLC filed a timely response, to which PG&E filed a response.

After issuance of the draft Mitigated Negative Declaration (MND) on August 13, 2013, the Administrative Law Judge (ALJ) convened a prehearing conference on August 21, 2013. The assigned Commissioner issued a scoping memo and ruling on August 29, 2013, identifying the issues to be determined by the Commission in resolving the proceeding and setting a schedule for addressing those issues.

Upon waiver of cross-examination by the parties, the ALJ removed the previously-scheduled evidentiary hearing from the calendar and received

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<sup>1</sup> Formerly, the Division of Ratepayer Advocates.

PG&E's prepared testimony and the final MND<sup>2</sup> into evidence. PG&E and ORA filed opening briefs on November 8, 2013, and PG&E filed a reply brief on November 22, 2013, upon which the matter was submitted.

#### **4. Scope of Issues**

Pursuant to Pub. Util. Code § 1001 et seq., PG&E may not proceed with its proposed project absent certification by the Commission that the present or future public convenience and necessity require it, and the Commission shall determine the maximum cost of the approved project. As a basis for granting such certification, the Commission must consider community values, recreational and park areas, historical and aesthetic values, and the influence on the environment. (Pub. Util. Code § 1002(a).) Pursuant to General Order (GO) 131-D, the review process established by the California Environmental Quality Act (CEQA) is the primary focus for this review. CEQA requires the lead agency (the Commission in this case) to conduct a review to identify environmental impacts of the project, and ways to avoid or reduce environmental damage, for consideration in the determination of whether to approve the project or a project alternative.

The Commission's Energy Division, which is conducting the required environmental review, issued a draft MND for the proposed project on August 13, 2013. An MND is a written statement prepared for a proposed project when the initial study has identified potentially significant effects on the environment, but revisions to the proposed plan and agreed to by the applicant would avoid or mitigate those effects to less than significant. CEQA requires

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<sup>2</sup> The Commission's Energy Division issued the final MND on October 30, 2013.

that, prior to approving the project or a project alternative, the lead agency certify that the MND was completed in compliance with CEQA, that it reviewed and considered the MND prior to approving the proposed project.

In addition, pursuant to GO 131-D and Decision (D.) 06-01-042, the Commission will consider whether the project (or project alternative) design is in compliance with the Commission's policies governing the mitigation of electromagnetic field (EMF) effects using low-cost and no-cost measures.

Accordingly, the Commission must determine the following issues in the proceeding:

1. Is there a need for the proposed project?
2. Is there no substantial evidence that the proposed project will have a significant effect on the environment?
3. Was the MND completed in compliance with CEQA, did the Commission review and consider the MND prior to approving the project or a project alternative, and does the MND reflect our independent judgment?
4. Is the proposed project designed in compliance with the Commission's policies governing the mitigation of EMF effects using low-cost and no-cost measures?
5. What is the maximum cost of the approved project?

## **5. Environmental Review Process**

As stated previously, the Commission's Energy Division staff issued a draft MND on August 13, 2013. Notice of the draft MND was published in the San Francisco Examiner on August 18 and 19, 2013, and a public informational meeting was held on August 20, 2013, in San Francisco.

Energy Division received public comments from the California Department of Fish and Wildlife, the San Francisco Bay Conservation Development Commission, the San Francisco Public Utilities Commission, two

members of the public, and PG&E. Energy Division responded to all of the comments in the final MND, which it issued on October 30, 2013. Although a few revisions were made to clarify and revise the discussion and certain mitigation measures described in the MND, the final MND does not identify any new significant environmental impacts, and does not omit any existing mitigation measures, from those identified in the draft MND.

## **6. Project Need**

PG&E asserts, and no party disputes, that there is a need to improve the reliability of electric service for downtown San Francisco and that this project would address that need. PG&E's Embarcadero Substation, which provides the sole source of electricity to downtown San Francisco, currently receives power from two underground 230 kV transmission lines. In the event that both cables are forced out of service, or one cable is out of service due to a planned outage and the other cable is forced out of service, Embarcadero Substation will be forced out of service.

Both cables are located in areas of San Francisco expected to be subject to significant liquefaction in the event of a major earthquake. PG&E retained InfraTerra, Inc., a specialist in seismic response of infrastructure systems, and an independent technical review panel consisting of Dr. Thomas O'Rourke of Cornell University and Dr. Steve Kramer of the University of Washington, both recognized experts in seismic response, to evaluate the seismic risk to the two cables. The study shows that there is a 91.1 percent probability of concurrent failure of the two cables in the event of a magnitude 7.8 earthquake on the San Andreas Fault, and a 48.2 percent probability of concurrent failure in the event of a magnitude 7.0 earthquake on the Hayward fault. It further shows that

the overall 30-year and 50-year probabilities for concurrent failure are 26 percent and 39.4 percent, respectively.

Physical damage to each could take two to four months to fix and would have severe economic impacts on downtown San Francisco. PG&E retained Dr. Michael Sullivan of Freeman, Sullivan & Co., an expert in electrical outage costs, to analyze the expected economic costs to businesses of long duration outages in downtown San Francisco. Direct costs to local businesses would range from \$125.7 million in the event of a 24-hour outage to nearly \$3 billion in the event of a seven-week outage. Indirect costs experienced by businesses in California as a whole would range from \$62.9 million to \$251.4 million in the event of a 24-hour outage to \$1.461 billion to \$5.845 billion in the event of a seven-week outage. In addition, many residents, particularly those that live in high-rise buildings that rely on mechanical ventilation and elevators, would have to evacuate their homes and find other places to live during the outage; governmental agencies would incur significant additional costs to provide security, traffic control and emergency services during an outage; and an extended outage would cause many businesses to fail and jobs to be lost.

The third cable provided by the project is designed to withstand a 7.8 magnitude earthquake on the San Andreas Fault. InfraTerra, Inc.'s study shows that, with the project, the probability of a concurrent failure of all three cables is reduced to between 4.6 percent and 8 percent in the event of a magnitude 7.8 earthquake on the San Andreas Fault, and to between 0.8 percent and 1.6 percent in the event of a magnitude 7.0 earthquake on the Hayward fault. It further shows that the overall 30-year probability for concurrent failure is reduced to between 0.6 percent and 1.1 percent and the overall 50-year

probability for concurrent failure is reduced to between 0.9 percent and 1.9 percent.

The risk of an Embarcadero Substation outage from non-seismic events is also reduced. By connecting PG&E's Embarcadero Substation to the Potrero Switchyard, the project will also provide an interconnection for PG&E's San Francisco 230 kV and 115 kV transmission systems and, thereby, additional operational and reliability benefits. Having a third cable will mitigate the risk of having to drop customer load in the event of the loss of a single cable when, at some point after approximately 2030, it is anticipated that the customer load served by Embarcadero Substation will exceed the capability of one of the existing cables and when, at some point after the existing cables' estimated 40-year useful life ends in 2014, it will become necessary to replace each of the existing cables.

There is no cost-effective alternative to transmission facilities to meet the need for an efficient, reliable and affordable supply of electricity to downtown San Francisco. (Pub. Util. Code § 1002.3.) For other alternatives such as demand-side generation and energy storage facilities to provide service that is equivalent to the proposed project, there would need to be over 200 megawatts of such facilities installed in the downtown area, capable of providing power 24 hours a day seven days a week for at least eight weeks. Such a solution is not feasible.

No party opposes the project on the basis of community values. (Pub. Util. Code § 1002(a)(1).)

For all these reasons, the present and future public convenience and necessity require the project.

**7. No Significant Effect on the Environment**

The MND finds that, with the incorporation of mitigation measures identified in the Mitigation Monitoring Plan included therein and attached to this order, all project-related environmental impacts can be reduced to less than significant levels. Among other things, the Embarcadero-Potrero 230 kV Transmission Project, as mitigated, will avoid any significant environmental impacts, including those with respect to public safety and the safety of utility services, recreational and park areas, historical and aesthetic values, and influences on the environment.

**8. CEQA Compliance and Certification**

CEQA requires the lead agency to certify that the MND was completed in compliance with CEQA, that the agency has reviewed and considered it prior to approving the project, and that the MND reflects the agency's independent judgment. As previously discussed, the MND was completed after notice and opportunity for public comment. The final MND documents all comments made on the draft MND and responds to them. The MND identifies mitigation measures that will avoid any significant environmental impacts. We have reviewed and considered the information contained in the MND. We find that substantial evidence supports the MND's findings, and we certify that the MND was completed in compliance with CEQA, that we have reviewed and considered the information contained in it, and that it reflects our independent judgment.



**9. EMF Policy Compliance**

The Commission has examined EMF impacts in several previous proceedings.<sup>3</sup> We found the scientific evidence presented in those proceedings was uncertain as to the possible health effects of EMFs and we did not find it appropriate to adopt any related numerical standards. Because there is no agreement among scientists that exposure to EMF creates any potential health risk, and because CEQA does not define or adopt any standards to address the potential health risk impacts of possible exposure to EMFs, the Commission does not consider magnetic fields in the context of CEQA and determination of environmental impacts.

However, recognizing that public concern remains, we do require, pursuant to GO 131 D, Section X.A, that all requests for a permit to construct include a description of the measures taken or proposed by the utility to reduce the potential for exposure to EMFs generated by the proposed project. We developed an interim policy that requires utilities, among other things, to identify the no-cost measures undertaken, and the low-cost measures implemented, to reduce the potential EMF impacts. The benchmark established for low-cost measures is 4 percent of the total budgeted project cost that results in an EMF reduction of at least 15 percent (as measured at the edge of the utility right of way).

PG&E's preliminary EMF management plan for the Embarcadero-Potrero 230 kV Transmission Project proposes to apply the following no-cost and low-cost magnetic field mitigation:

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<sup>3</sup> See D.06-01-042 and D.93-11-013.

- Typically employ a triangular placement of the three cables in a 3'4" x 3'7" duct bank.
- Place the trench within the right-of-way to reduce magnetic field exposure to buildings along the entire route, except where the location of existing underground utilities prevent strategic line placement.
- Install a five-foot lower trench that achieves at least a 15 percent magnetic field reduction for the underground transmission line near high priority group land uses.

The EMF management plan will ultimately be tailored to the final route and configuration approved by the Commission.

This design complies with the Commission's EMF decisions.

#### **10. Maximum Project Cost**

PG&E estimates the maximum reasonable cost for the project to be \$196.8 million, including contingency. PG&E bases this estimate on a combination of preliminary cost estimates and bids that it obtained from independent engineering and construction firms, Black & Veatch Construction Inc. (related to the engineering, procurement and construction of the new 230 kV transmission line), ABBG Inc. (related to the engineering, procurement and construction of the new 230 kV Potrero Switchyard), and Sumitomo Electric USA (related to cable supply and installation), as well as PG&E's estimates of its own costs. This estimate is a \$20 million reduction from the estimate that PG&E provided in its application, owing to a proposal for the submarine and land cables and installation of the submarine cable that is lower than PG&E had earlier estimated, a reduction in the estimated cost to construct and equip the new Potrero switchyard, and further engineering design which eliminated the need for cofferdams on the bay floor.

No party contests PG&E's estimated maximum reasonable cost.

ORA recommends that, if the final detailed engineering design-based construction estimate for the Embarcadero-Potrero 230 kV Transmission Project is one percent or more lower than PG&E's estimated maximum reasonable cost, the Commission require PG&E to file an advice letter within 30 days of developing the final estimate to show cause why the Commission should not adopt a lower amount as the maximum reasonable and prudent cost to reflect the final estimate. This recommendation is consistent with Commission precedent (*see, e.g.*, D.07-01-040, Ordering Paragraph 11), and PG&E does not oppose it. To the extent that the final detailed engineering design-based construction estimate is lower than the preliminary estimate, it is reasonable to adopt it as the maximum reasonable and prudent cost. For these reasons, we adopt ORA's recommendation.

ORA also recommends that the Commission direct PG&E to provide quarterly project status updates as a tool to monitor project progress and costs. Such a requirement serves no apparent purpose. The Mitigation Monitoring Plan provides for Commission-designated environmental consultants to monitor construction activities and report to the Commission's Project Manager. (Reference Exhibit A at 6-1.) Although, as ORA notes, the Commission adopted this requirement in D.08-12-058 for the Sunrise Powerlink Transmission Project, the requirement reflected the need to monitor open issues in that proceeding, including uncertainty about the project schedule, engineering difficulties and costs arising from the Commission's approval of a routing alternative rather than SDG&E's proposed route (D.08-12-058 at 292), uncertainty about the extent of ordered undergrounding (*id.* at 274 n. 687, 274), and uncertainty about the need for a transformer (*id.* at 87, 275). Here, in contrast, the Embarcadero-Potrero

230 kV Transmission Project route has no significant environmental impacts, and the major components are known. We decline to adopt this recommendation.

#### **11. Categorization and Need for Hearings**

In ALJ Resolution 176-3306, the Commission preliminarily determined that the category for this proceeding is ratemaking, and that a hearing was necessary. On August 29, 2013, the scoping memo ratified ALJ Resolution 176-3306. Upon waiver of cross-examination by the parties, the ALJ removed the scheduled evidentiary hearing from the calendar. Therefore, evidentiary hearings are not necessary.

#### **12. Comments on Proposed Decision**

The proposed decision of ALJ Hallie Yacknin in this matter was mailed to the parties in accordance with Pub. Util. Code § 311 and comments were allowed pursuant to Rule 14.3 of the Commission's Rules of Practice and Procedure. Opening comments were filed by PG&E on December 31, 2013. The Commission hereby adopts the ALJ's proposed decision.

#### **13. Assignment of Proceeding**

Commissioner Michel P. Florio is the assigned commissioner and ALJ Hallie Yacknin is the presiding officer to the proceeding.

#### **Findings of Fact**

1. There is a need to improve the reliability of electric service for downtown San Francisco to reduce the potential for extended electrical outages in a seismic event.
2. The Embarcadero-Potrero 230 kV Transmission Project will meet the need to improve the reliability of electric service for downtown San Francisco.
3. There is no cost-effective alternative to transmission facilities that meet the need to improve the reliability of electric service for downtown San Francisco.

4. No party opposes the project on the basis of community values.

5. With the implementation of the mitigation measures identified in the Mitigation Monitoring Plan identified in the MND and attached to this order, the Embarcadero-Potrero 230 kV Transmission Project will avoid any significant environmental impacts, including those with respect to public safety and the safety of utility services, recreational and park areas, historical and aesthetic values, and influences on the environment.

6. PG&E's preliminary EMF management plan for the Embarcadero-Potrero 230 kV transmission project includes no-cost and low-cost measures (within the meaning of D.93-11-013, and D.06-01-042) to reduce possible exposure to EMF.

7. The Commission has reviewed and considered the information contained in the MND and finds that it reflects the Commission's independent judgment and analysis.

8. The maximum reasonable cost for the project is \$196.8 million, including contingency.

9. Hearings are not necessary.

### **Conclusions of Law**

1. The MND was completed in compliance with CEQA.

2. PG&E's preliminary EMF management plan for the Embarcadero-Potrero 230 kV Transmission Project is consistent with the Commission's EMF policy for implementing no-cost and low-cost measures to reduce potential EMF impacts.

3. PG&E should be granted a certificate of public convenience and necessity to construct the Embarcadero-Potrero 230 kV transmission project with the mitigation identified in the Mitigation Monitoring Plan, which is attached to this order.

4. If the final detailed engineering design-based construction estimate for the Embarcadero-Potrero Transmission Project is one percent or more lower than \$196.8 million, including contingency, absent good cause shown to the contrary, it is reasonable for the Commission to adopt the lower amount as the maximum reasonable cost for the project.

5. If the final detailed engineering design-based construction estimate for the Embarcadero-Potrero Transmission Project is one percent or more lower than \$196.8 million, including contingency, PG&E should, within 30 days of developing the final estimate, file an advice letter to show cause why the Commission should not adopt a lower amount as the maximum reasonable and prudent cost to reflect the final estimate.

6. This decision should be effective today.

7. Application 12-12-004 should be closed.

## **O R D E R**

### **IT IS ORDERED** that:

1. The Mitigated Negative Declaration for the Embarcadero-Potrero 230 kilovolt Transmission Project is certified as having been completed in compliance with the California Environmental Quality Act, reviewed and considered by the Commission prior to approving the project, and reflective of the Commission's independent judgment.

2. Pacific Gas and Electric Company is granted a certificate of public convenience and necessity to construct the Embarcadero-Potrero 230 kilovolt Transmission Project, with the mitigation identified in the Mitigation Monitoring Plan, which is attached to this order.

3. Energy Division may approve requests by Pacific Gas and Electric Company for minor project refinements that may be necessary due to final engineering of the Embarcadero-Potrero 230 kilovolt Transmission Project so long as such minor project refinements are located within the geographic boundary of the study area of the Mitigated Negative Declaration and do not, without mitigation, result in a new significant impact or a substantial increase in the severity of a previously identified significant impact based on the criteria used in the environmental document; conflict with any mitigation measure or applicable law or policy; or trigger an additional permit requirement. Pacific Gas and Electric Company shall seek any other project refinements by a petition to modify this decision.

4. Pursuant to Pub. Util. Code § 1005.5(a), the maximum cost determined to be reasonable and prudent for the Embarcadero-Potrero Transmission Project is \$196.8 million, including contingency.

5. If the final detailed engineering design-based construction estimate for the Embarcadero-Potrero 230 kilovolt Transmission Project is one percent or more lower than \$196.8 million, including contingency, Pacific Gas and Electric Company shall, within 30 days of developing the final estimate, file an advice letter to show cause why the Commission should not adopt a lower amount as the maximum reasonable and prudent cost to reflect the final estimate.

6. Hearings are not necessary.

7. Application 12-12-004 is closed.

This order is effective today.

Dated \_\_\_\_\_, at San Francisco, California.